Multi-method computational modelling to build evidence supporting planning, preparedness and decision making in high risk health protection, security and operational response contexts

Many organisations rely on policies that define how to plan, prepare and respond to high risk scenarios. Pandemics, major disasters, mass casualty events, deliberate and accidental hazardous and infectious materials events are possible occurrences that require the development of portfolios of evidence to justify the expenditure of significant human and financial resources, at the potential expense of other more useful activities. The development of valid evidence to support policy development in these areas is challenging. It is often unethical or unfeasible to undertake direct experiment in high risk areas such as biological, chemical and hazardous materials preparedness and planning. Surrogates for actual field research such as simulated exercises, immersive training and tabletops can only go so far to explore these impacts and there is the ever present risk that factors such as context, emergence, complex interactions and unforeseen contexts may render many well thought out plans obsolete, or potentially worse than doing nothing. In this talk recent developments in multi-method computational modelling approaches incorporating Agent Based Modelling coupled with Discrete Event and Systems Dynamics, supported by the recent increased availability of low cost high performance computing resources, will be discussed. How these can be used to answer questions about policies that cannot be easily investigated in real life will be discussed, using examples of current research projects at the SPHCM exploring how health systems and health policies perform under extreme conditions such as mass casualty events and mass contamination events.

About Dr David Heslop

Dr David Heslop (FRACGP MBBS PhD (Medicine) MPH BSc (Adv) Hons I) is an Associate Professor at the School of Public Health and Community Medicine at UNSW, and retains significant military responsibilities as Senior Medical Adviser for CBRNE to Special Operations Headquarters Australia and to Australian Defence Force (ADF) joint senior leadership. He currently has active research collaborations with NSW Ambulance, NSW Health, Defence Science and Technology Group, Australian Defence Force Academy and the Australian Defence Force. His research strengths and interests focus on health systems design and analysis, hybrid and agent based modelling, organisational resilience, operational risk analysis and management, military medicine, emergency and prehospital care and health systems, and clinical governance and risk management.

Light refreshment is provided
Venue: Room 305, Level 3, Samuels Building, UNSW Upper Campus, Randwick
Enquiries: Ravit Danieli-Vlandis ravit@unsw.edu.au
Parking: Available on L5 of the parking station; enter via Gate 11 Botany St, Randwick
Map: www.facilities.unsw.edu.au/getting-uni/campus-maps

The School of Public Health and Community Medicine

Seminar Invitation

Wednesday 31st May
12:00 - 1:00 pm
Room 305 Samuels Building

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